

REMARKS

Examiner Alexander is thanked for the courtesy of an interview, which was held on December 20, 2002. The above amendments are submitted in response to the Office Action dated August 14, 2002 and in accordance with agreements reached during the interview. Reconsideration and allowance are requested.

Claims 25-44 are pending in this case. Claim 25 is the only independent claim. The discussions during the December 20th interview were centered on claim 25 and it is believed that the above amendments will place claim 25 and, consequently, all of the other claims in condition for allowance.

Claims 25-27, 30-31, 33, 35, 37-38 and 42-43 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 5,862,512 ("Voorhees *et al.*"). The remaining claims stand rejected under 35 U.S.C. 103 as obvious over Voorhees *et al.*

The present invention identifies liquids, such as petroleum distillates, marked with markers of a predetermined *relative concentration*. In the prior art, if the existence of two markers was used to identify a liquid there would only be four possibilities, marker 1, marker 2, marker 1 and 2 or neither marker one or two. Prior to the present invention, unique identification required large numbers of unique markers. Applicants have discovered that a multitude of liquids can be marked with unique signatures by testing for the relative concentrations of a small set of markers. The apparatus of the present invention requires a liquid marked with markers having a predetermined *concentration pattern*. Further, the apparatus must be able to detect and signal the relative concentration of the markers, and then compare the signal to known patterns of relative concentration.

During the interview it was noted that Voorhees *et al.* teaches that the accuracy and reliability of geochemical analysis of a soil gas sample can be improved when the sample is separated into separate portions and then a mass spectrometer measurement is then taken of the individual portions. The spectrum of each portion is compared against known contaminate

spectrums to determine if a contaminate is present. The spectrum of the entire sample, without artifacts from contaminants, can then be obtained.

While Voorhees et al. discloses components (i.e., detector, data storage and computer elements) that, in the most general sense, are analogous to the elements of claim 25, it was noted that the apparatus of Voorhees fails to include the structural limitations of the claimed invention, and the structure of Voorhees cannot perform the intended use of the claimed invention. The apparatus of Voorhees finds individual contaminants; it is not set-up to compare relative concentrations. If the liquid sample of the current invention was tested with the apparatus of Voorhees, only the presence of individual markers could be determined. Voorhees does not disclose a detector generating signals indicative of relative concentration of each of the markers.

The structure of the present invention also requires a pattern comparison element which receives the relative concentration pattern found from testing the liquid and compares it to relative concentration patterns in a look up table. The structure of Voorhees compares the tested signal against known contaminants, but does not compare relative concentrations. Again, the structure of Voorhees could only reveal the existence of markers not the relative concentrations of marker combinations or the identity of the liquid. Moreover, for the Voorhees apparatus to even identify a marker, it would have to be modified based on hindsight knowledge of Applicants' markers.

The structure of Voorhees also teaches away from the present invention by requiring separation of the soil gas sample into segments and testing the segments individually. If the present invention was attempted with the apparatus of Voorhees, there is no structure to solve the problem of the markers being separated into different segments. Further, when contaminants are found with the invention of Voorhees, the structure of Voorhees requires removing the measurement corresponding to the contaminants from the measurement of the total test sample. The present invention requires identifying the liquid based upon the relative concentrations of markers. Voorhees has no structure to identify the liquid based on markers.

The amendments to claim 25 further clarify applicants' contribution to the art. As amended, claim 25 now positively recites both the look-up table and comparison elements as part of a data processor, which receives the detector signals. These amendments are submitted for purposes of clarity, not to distinguish over the cited reference.

In summary, the present invention contains patentably distinct structural limitations which are neither anticipated nor rendered obvious by Voorhees. Reconsideration of the rejection in view of Applicants' arguments is respectfully requested.

Each of the dependent claims is patentable at least because it depends on allowable independent base claim 25.

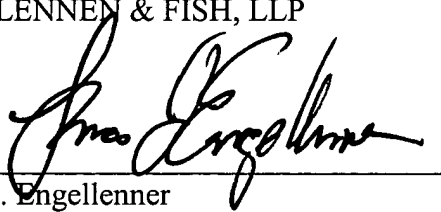
A Request for a Two-Month Extension of Time, together with the required extension fee, is also submitted herewith. Please charge any additional fees, or credit any overpayment, to Deposit Account No. 141449.

The Examiner is urged to telephone the undersigned Attorney for Applicants in the event that there are any remaining issues.

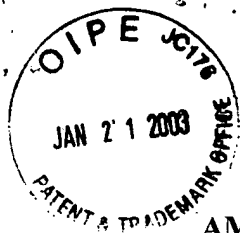
Respectfully submitted,

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Date: January 14, 2003

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JAN 24 2003

TC 1700

Serial No. 09/219,288
Group Art Unit: 1743
Examiner: L. Alexander
Atty. Docket No.: 101324-54

AMENDED CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

25. (Thrice Amended) An apparatus for assisting in the identification of a marked liquid, the liquid comprising a plurality of markers miscible with the liquid and present in a predetermined pattern of relative concentrations, the apparatus comprising:

a detector for detecting the plurality of markers and for generating signals indicative of relative concentrations of each of the markers, the signals defining a measured concentration pattern; and

a data processor connected to the detector to receive the signals therefrom, the data processor comprising:

a look-up table storing a plurality of known concentration patterns, each pattern corresponding to the signal from a specific combination of the plurality of markers at predefined relative concentrations; and

a pattern comparison element capable of comparing the measured concentration pattern with known concentration patterns of identified liquids, the known patterns being accessible, via [a] the look up table, to the pattern comparison element, so as to [assist in] permit the identification of the marked liquid.

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